

REMARKS

Claims 1-10 are pending. By this Response claim 4 is amended. Reconsideration and allowance based on the above amendment and below comments are respectfully requested.

Applicant notes that the amendment made to claim 4 are purely for grammatical reasons and should not be considered as substantive. The scope of the claimed features remains the same as prior to the amendments.

The Office Action rejects claims 1-10 under 35 U.S.C. §103(a) as being unpatentable over Sekine, et al. (U.S. Patent No. 6,476,869) and Yamaguchi, et al. (U.S. Patent No. 5,818,527). This rejection is respectfully traversed.

The Office Action alleges that Sekine teaches each of the claimed features of independent claims 1, 9 and 10 except for the features of a digital image shading device that corrects characteristic aberrations of a lens before the shooting of a next frame of an image or during the shooting of the next frame onward. The Office Action alleges that Yamaguchi makes up for this deficiency in Sekine and that the combination of Yamaguchi and Sekine provide applicant's invention. Applicant respectfully disagrees.

Sekine teaches a video camera device that obtains aberration information about the video signal and apparatus and provides a code representative of the aberration to a video tape which stores the video signal. A separate system, as illustrated in Fig. 2, reproduces the aberration and video signal from the video tape and corrects the aberration. See column 3, lines 15-30 and column 2, lines

1-13. Thus, as correctly stated in the Office Action, Sekine does not teach correcting the video signal before or during the next shooting of a next frame of an image.

Further, Yamaguchi fails to make up for Sekine's deficiencies. Yamaguchi teaches a video image device that captures and corrects video signals. The image is captured by the CCD 2, supplied to an A-D conversion circuit 4, then stored in memory 5. It is only after storing the image in memory 5 that the image is corrected. After storing is completed, the read control circuit 12A obtains data from a ROM 13B for correcting the video signal. The corrected image is then supplied to an interpolation circuit 6. See column 9, lines 40-55.

The Office Action alleges that column 1, lines 50-67 and column 6, lines 11-16 teach the correcting of the image signal before or during the next image frame. Applicant respectfully submits that column 1 teaches the acquiring, converting and storing of the video signal, not the correction thereof. Also, column 6 merely teaches that the correction is performed within the image processor 30B. The image processor comprises the entire image capture and display device. See Fig. 8. These two (2) sections do not teach the claimed correction techniques of the present invention.

The Office Action infers that Yamaguchi teaches correcting the video signal prior to or during the next image frame based on the fact that the image is corrected within the image processor 30B. As stated above, the image processor comprises the entire circuitry of the image device, as illustrated by Fig. 8.

Further, the description on column 9, lines 40-55 clearly state that the correction is performed in the read control circuit 12A after storage of the video signal in memory 5. Thus, the Office's Action allegations are unfounded as the facts stated within the reference teach contrary to the allegations in the Office Action. Thus, Yamaguchi does not teach, *inter alia*, a lens characteristic correction unit for performing, by using the stored lens characteristic of said image forming lens in a position of the frame image photograph, a process of correcting a deterioration of an image quality derived from said image forming lens upon the entire digital image data before the shooting of a next frame of image or during the shooting of the next frame onward, as recited in independent claims 1, 9 and 10.

Further, one of ordinary skill in the art would not be motivated to combine the teachings of Sekine and Yamaguchi. Sekine teaches two separate systems, an image capture system and a system for correcting the image signal. Sekine's system is specifically developed into two separate systems in order to keep the image device as small as possible.

In contrast, Yamaguchi teaches an image device, which includes a correction means within the image capture device. One of ordinary skill would not look to include an image processor according to Yamaguchi in the image device of Sekine which is designed to be separate from an image correction system.

Further, no motivation is provided within the references themselves or by one of ordinary skill to make such a combination. In fact, the Office Action's motivation states that motivation is provided because it would provide in Sekine

“means to provide a process of image correction that is capable of producing central portions of images at high quality and entire marginal portions of images while realizing a correction circuit that is simple, small, and low cost”. Sekine already provides a correction device thus adding a second correction device within the image capture device would be unnecessary. Also, adding features would increase the size of Sekine’s image capture device and not make it smaller or cheaper.

Also, claim 4 recites, *inter alia*, the digital image data of the frame which is performed, and the correction by the lens characteristic correction unit are stored in said image memory. The Office Action states that Sekine discloses in column 6, lines 13-18 that the digital image data (color video output) of the frame corrected by the lens characteristic correction unit (Fig. 2) is stored in the image memory (video tape). However, the corrected image data in Sekine is recorded in the recording circuit 82 together with the image shake information, the lens characteristic information is not stored. In other words, Sekine suggests in column 6, lines 13-18 and in Fig. 5 correcting the image shake, but not correcting a deterioration of an image quality derived from the lens characteristic of the image forming lens. Thus, in Sekine, the image data together with the lens characteristic data are not stored in the memory.

Further, Yamaguchi suggest that the image memory 5 is connected downstream from the A-D conversion circuit 4 as shown in Fig. 8. Thus, Yamaguchi merely discloses storing the A-D converted image data before

correction. Moreover, the image memory 5 does not store the lens characteristic data, either. The lens characteristic data is stored in the correction ROM 13B. Accordingly, Yamaguchi does not teach storing the corrected image data and the lens characteristic in the same image memory. As stated above, the correction, in Yamaguchi, is performed in the read control circuit 12A after storage of the video signal in memory 5. The corrected data and the lens characteristic data is not stored in memory 5.

Thus, both Sekine and Yamaguchi fail to teach the features of claim 4. Therefore, the combination of the two references do not teach the correcting the image signal (i.e, correcting a deterioration of the image quality derived from the lens characteristic of the image forming lens) before the shooting of a next frame of an image or during shooting of the next frame, as well as storing the corrected image data and the lens characteristic data in the same image memory, as in the present invention. Specifically

Therefore, in view of the above, applicant respectfully submits that the combination of Sekine and Yamaguchi's teachings fail to teach each and every feature of the claimed invention as required. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For at least these reasons, it is respectfully submitted that claims 1-10 are distinguishable over the cited art. Favorable consideration and prompt allowance are earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant respectfully petitions for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$110.00 is attached hereto.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings (Reg. No. 48,917) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Appl. No. 09/330,096

Respectfully submitted,

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MKM/CJB:cb
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Attachment(s)

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